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09/997,446	11/30/2001	Robert J. Hauber	CU-2740	3439
26530	7590	08/25/2004	EXAMINER	
LADAS & PARRY 224 SOUTH MICHIGAN AVENUE, SUITE 1200 CHICAGO, IL 60604			POE, MICHAEL I	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/997,446

Applicant(s)

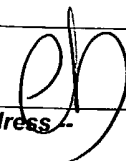
HAUBER ET AL.

Examiner

Michael I Poe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 20040607, 20020319, 2001 11 30
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Amendments*

1. Applicant's amendments filed on November 30, 2001 and May 27, 2004 have been entered. Based upon the entry of these amendments, no existing claims have been amended, existing claims 18-31 have been canceled, and no new claims have been added. Claims 1-17 are currently pending.

### *Priority*

2. It is noted that this application appears to claim subject matter disclosed in prior Application No. 09/875,733, filed June 6, 2001. A reference to the prior application must be inserted as the first sentence of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e) or 120. See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. Also, the current status of all nonprovisional parent applications referenced should be included.

Although the specification has been amended to include the necessary reference to the prior application, the reference does not include the current status of all nonprovisional parent applications. The applicant must amend the reference in the specification to include the current status of all nonprovisional parent application in response to this Office action.

### *Election/Restrictions*

3. Applicant's election without traverse of Group I, claims 1-17 in the reply filed on May 27, 2004 is acknowledged.
4. Claims 23-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 27, 2004. It is noted that non-elected claims 23-31 were canceled by the amendment filed on May 27, 2004.

### ***Specification***

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In the instant case, the abstract exceed 150 words and must be shortened in response to this Office action.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The use of the trademarks Nylon®, Teflon®, Neoprene® and Bunyl® has been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology. In the instant case, the generic terminology has not been provided for each of these trademarks

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

### ***Claim Objections***

8. Claims 13 and 17 are objected to because of the following informalities: (1) the trademarks used in claims 13 and 17 should be expressed in terms of their generic terminology (e.g., "Teflon" should be expressed as "polytetrafluoroethylene") because the compositions represented by those trademarks can change over time thereby rendering the claims indefinite. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 4-6 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 5 recite the limitation "said lower and upper inorganic fiber sheets" in lines 2 and 3 and line 2, respectively. Claim 6 recites the limitation "said lower inorganic fiber sheet" in line 4. There is insufficient antecedent basis for these limitations in the claims. For the purpose of this Office action, the examiner has assumed that the lower inorganic fiber sheet corresponds to the first inorganic fiber sheet and that the upper inorganic fiber sheet corresponds to the second inorganic fiber sheet.

Claim 11 includes the recitation "to uniformly cover said unset second gypsum slurry over said upwardly facing said first inorganic fiber sheet". The recitation is generally confusing because it appears to be missing word(s). For the purpose of this Office action, the examiner has assumed that the second gypsum slurry covers over an upwardly facing surface of the first inorganic fiber sheet.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,303,722 (Pilgrim) in view of U.S. Patent No. 4,265,979 (Baehr et al.) in further view of U.S. Patent No. 6,475,313 B1 (Peterson et al.).

**Claims 1, 2, 6 and 11**

Pilgrim teaches a method of forming building components including applying to a first face of a substrate of a foamed or lightweight material a first fabric or web of inorganic fibers (a first continuous sheet, said sheet including randomly aligned, inorganic fibers having random interstices between said fibers) impregnated with a fluid aqueous composition of thermosetting condensation polymer precursor (a polymeric compound additive) and calcium sulphate plaster (a first gypsum slurry having a first consistency); applying to the opposite face of the substrate a second fabric or web of inorganic fibers (a second of said at least one continuous, inorganic fiber sheets, said second inorganic fiber sheet having random interstices between the fibers) impregnated with the fluid aqueous composition (a third gypsum slurry having a third consistency); and allowing the fluid composition to penetrate the first and second fabrics or webs and bond it to the faces of the substrate (sheathing to form a wet gypsum board) (column 2, lines 14-22 and 29-39; column 2, line 47 - column 3, line 12; column 3, lines 62-68; column 4, lines 16-22). Pilgrim further teaches that the fabrics or webs are impregnated with the fluid aqueous composition by feeding (passing) the fabrics or webs through the nips of two separate pairs of rollers (a gypsum application station, said station including two applicator wheels for passing the inorganic fiber sheet therethrough) that act as spreaders for the composition (so as to cause the first gypsum slurry having a first consistency to penetrate through said random interstices between the inorganic fibers and to thereby coat both the top and bottom surfaces of said first inorganic fiber sheet with said gypsum slurry having a first consistency; causing said third gypsum slurry to penetrate essentially completely through said random interstices and to thereby coat both top and bottom surfaces of said second inorganic fiber sheet with said third gypsum slurry) (column 5, line 55 - column 6, line 5). Pilgrim further teaches that the laminate (said wet gypsum board) resulting from the application of the fabrics or webs is passed to either a hot or cold press (a board forming station having a lower forming plate and an upper forming plate, the separation between said lower forming plate and said upper forming plate defining a predetermined dimension substantially equal to the desired thickness of the manufactured gypsum board product) for consolidation into the building component (said gypsum board product) (column 5, line 55 - column 6, line 5).

With regard to claims 1 and 11, Pilgrim does not specifically teach that the substrate may be a wet gypsum slurry having a second consistency that is deposited on the first fabric or web and causing the wet gypsum slurry to be essentially evenly distributed over or to uniformly cover over an upwardly facing top surface of the first fabric or web. With regard to claim 2, Pilgrim does not specifically teach the relative densities of the first and second fabrics or webs and the substrate; as such, Pilgrim does not specifically teach that the impregnated fabrics or webs are substantially denser than the substrate. However, Baehr et al. teach a method for the production of glass-fiber reinforced gypsum sheets including forming a sheet of fibers impregnated with rehydrated gypsum (a first continuous inorganic fiber sheet); depositing (depositing and causing to be essentially distributed over an upward facing top surface) an aqueous, foamed slurry of gypsum (a second gypsum slurry having a second consistency) over the sheet (on said first inorganic sheet); and applying a second, identical sheet of fibers impregnated with rehydrated gypsum (a second continuous inorganic fiber sheet) to the top surface of the aqueous slurry of gypsum wherein the core has a relatively lower density and the reinforcing sheets have a relatively higher density (providing said first gypsum slurry having a slurry consistency which is substantially denser relative to said second gypsum slurry consistency) (column 3, line 60 - column 4, line 23; column 6, lines 26 - 55). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to form a foamed substrate by applying a foamed gypsum slurry to the first fabric or web and to subsequently apply the second fabric web to the foamed gypsum slurry thereby sheathing the foamed gypsum slurry in the process of Pilgrim as taught in Baehr et al. to combine the sheathing and substrate forming processes to thereby make the process of Pilgrim more economic and efficient. Further, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use a core material having a lower density than the sheathing materials in the process of Pilgrim as taught by Baehr et al. to provide a building material with increased strength without an associated increase in the overall weight (see specifically column 3, lines 6-10 of Baehr et al.).

With regard to claim 1, neither Pilgrim nor Baehr et al. specifically teaches that the board forming station including a lower forming plate and an upper forming plate wherein the upper forming plate has at least a portion thereof being set at a predetermined angle to the lower forming plate. However, Peterson et al. teach a process for making gypsum board having a gypsum core sheathed with a paper backing

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sheet on one surface and a fiberglass or plastic woven or non-woven scrim material on the opposite surface including passing the board laminate through a board forming station comprising a table (a lower forming plate) and a forming plate (an upper forming plate) having a portion at an angle with respect to the table (said upper forming plate having at least a portion thereof being set at a predetermined angle to said lower forming plate, the separation between said lower forming plate and said portion of said upper forming plate defining a predetermined dimension substantially equal to the desired thickness of the manufactured gypsum board product) (abstract; Figures 2 and 3; column 2, line 56 - column 3, line 34). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to provide an upper forming plate having a portion thereof that is at a predetermined angle with respect to a lower forming plate in the process of Pilgrim in view of Baehr et al. as taught by Peterson et al. to provide more even and accurate distribution of the gypsum slurry used for the core of the formed board.

**Claims 3 and 4**

The discussion of Pilgrim, Baehr et al. and Peterson et al. as applied to claim 1 above applies herein.

Note that one of ordinary skill in the art would have obviously recognized, when viewing the teachings of Pilgrim as a whole, that the fluid aqueous compositions used to impregnate both the first and second fabrics or webs were substantially identical and were taken from an identical gypsum slurry supply as claimed.

**Claim 5**

The discussion of Pilgrim, Baehr et al. and Peterson et al. as applied to claim 1 above applies herein.

Pilgrim further teaches that the inorganic fibers are preferably vitreous fibers such as glass fibers, rock or slag wool (said inorganic fibers of said lower and upper sheets further comprises a glass fiber) (column 3, lines 62-68).

**Claims 9 and 10**

The discussion of Pilgrim, Baehr et al. and Peterson et al. as applied to claim 1 above applies herein.



Although Pilgrim teaches the use of applicator wheels as discussed more extensively with regard to claim 1 above, Pilgrim does not specifically teach the direction of rotation of the applicator wheels; therefore, Pilgrim does not specifically teach that the applicator wheels rotate with in the forward or reverse direction relative to the motion of the first fabric or web. However, the examiner takes official notice that it was well known in the art at the time the invention was made to rotate applicator wheels in fabric or web impregnation processes both in the forward and reverse directions relative to the motion of the fabric or web. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to rotate the applicator wheels in either the forward or reverse direction relative to the motion of the fabric or web in the process of Pilgrim in view of Baehr et al. in further view of Peterson et al. as was well known in the art to open to fiber structure of the fabric or web to thereby allow the fluid aqueous composition to better penetrate through the fiber structure of the web.

13. Claims 7 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,303,722 (Pilgrim) in view of U.S. Patent No. 5,397,631 (Green et al.) and U.S. Patent No. 4,265,979 (Baehr et al.) in further view of U.S. Patent No. 6,475,313 B1 (Peterson et al.).

#### **Claims 7 and 15-17**

The discussion of Pilgrim, Baehr et al. and Peterson et al. as applied to claims 1 and 6 above applies herein.

Pilgrim does not specifically teach a step of applying an acrylic coating onto a lower and/or upper surface of the gypsum board; that the thermosetting condensation polymer precursor in the fluid aqueous composition bonds with an acrylic coating applied to the lower and/or upper surface of the gypsum board; that the acrylic coating is applied by flood coating; and that the polymeric additive is selected from the claimed group. However, Green et al. teach a method of forming a fibrous mat-faced gypsum board coated with a water-resistant resinous coating including forming a fibrous mat-faced gypsum board including a water-resistive additive such as organopolysiloxane (an additive step comprising introducing a polymer compound additive; said additive step includes adding to said unset gypsum at least one polymeric compound selected from a group consisting of polyacrylamide, ...and polydimethyl siloxane) and flood coating the surfaces of the fibrous mat-faced gypsum board with a composition comprising thermoplastic synthetic resins such as poly(vinyl acetate), poly(vinyl chloride), and a copolymer of vinyl

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acetate and vinyl chloride and acrylic resins (a step following the board forming station of applying an acrylic coating onto at least one of said lower and upper surface of said gypsum board and thereby causing said acrylic coating to bond with said polymeric additive in said first and third gypsum slurries); after the board forming step, an acrylic applying step including applying an acrylic coating over the gypsum slurry containing said polymer layer on said gypsum board surface before said polymer is cured; said acrylic coating is applied by flood coating) (column 7, lines 4 - 42; column 10, lines 50-59). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use a water-resistant polymer additive in the fluid aqueous composition and to coat the first and second fabrics or webs with a water-resistant acrylic coating after forming the building product in the process of Pilgrim in view of Baehr et al. in further view of Peterson et al. as taught by Green et al. to provide a building product with highly increased water-resistance.

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,303,722 (Pilgrim) in view of U.S. Patent No. 5,718,797 (Phillips et al.) and U.S. Patent No. 4,265,979 (Baehr et al.) in further view of U.S. Patent No. 6,475,313 B1 (Peterson et al.).

**Claim 8**

The discussion of Pilgrim, Baehr et al. and Peterson et al. as applied to claim 1 above applies herein.

Pilgrim does not specifically teach a step of folding the laterally edges of the first fabric or web over the substrate prior to the step of applying the second fabric or web onto the substrate. However, Phillips et al. teach a method for manufacturing gypsum board including providing a coated sheet (a first continuous sheet); applying a foamed gypsum (second gypsum slurry) to the surface of the coated sheet to form a foamed gypsum core; passing the coated sheet with foamed gypsum core through conventional folding shoes to fold the borders of the coated sheet upwardly and then down on top of the foamed gypsum core (a step for folding the lateral edges of said first continuous sheet over said second gypsum slurry prior to said step of applying said second sheet onto the second gypsum slurry) ; and applying a second cover sheet (second continuous sheet) over the foamed gypsum core with the edges of the coated sheet folded thereupon (column 4, lines 23-59). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been

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motivated to fold the edges of the first fabric or web about the substrate prior to applying the second fabric or web in the process of Pilgrim in view of Baehr et al. in further view of Peterson et al. as taught by Phillips et al. to provide a concealed seam between the first and second fabrics or webs thereby forming a more accurate edge on the building product.

15. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,303,722 (Pilgrim) in view of U.S. Patent No. 5,476,567 (Fujisawa et al.) and U.S. Patent No. 4,265,979 (Baehr et al.) in further view of U.S. Patent No. 6,475,313 B1 (Peterson et al.).

**Claims 12 and 13**

The discussion of Pilgrim, Baehr et al. and Peterson et al. as applied to claim 1 above applies herein.

Pilgrim does not specifically teach that at least one of the applicator wheels includes a thin film polymer coating on the surface thereof, more specifically a thin film polymer coating comprising Teflon®. However, Fujisawa et al. teach a method of impregnating fibrous mats including passing a fibrous mat between impregnating rollers (wheels) formed from metal pipe to which a Teflon® coating (a thin film polymer coating; said thin film polymer coating further comprising Teflon®) has been applied (abstract; column 2, lines 58-68; column 4, lines 7-13). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use Teflon® coated applicator wheels in the process of Pilgrim in view of Baehr et al. in further view of Peterson et al. as taught by Fujisawa et al. to allow any adhering impregnating material to be wiped away easily and to make it possible for the wheels to rotate smoothly (see column 4, lines 7-13 of Fujisawa et al.).

16. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,303,722 (Pilgrim) in view of U.S. Patent No. 4,488,917 (Porter et al.) and U.S. Patent No. 4,265,979 (Baehr et al.) in further view of U.S. Patent No. 6,475,313 B1 (Peterson et al.).

**Claim 14**

The discussion of Pilgrim, Baehr et al. and Peterson et al. as applied to claim 1 above applies herein.

Pilgrim does not specifically teach that the wet gypsum board is passed through an edger bar assembly after the board forming step so as to form the lateral edges of the gypsum board product and to complete the smoothing of the upper surface of the gypsum board product. However, Porter et al. teach a method of making a cement board including towing a continuous carrier sheet and a continuous reinforcing fiber scrim along the surface of a table by a conveyor belt; depositing a mortar onto the continuous carrier sheet and the continuous reinforcing fiber scrim; and leveling and smooth the mortar with a screed extending across the transverse direction of the sheet and scrim having side rails at each end thereof for forming the edge of the cement board (passing the wet gypsum board through an edger bar assembly, after the board forming step, so as to form the lateral edges of said gypsum board product and to complete the smoothing of the upper surface of said gypsum board product) (column 3, line 8-25). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made and one of ordinary skill would have been motivated to use an edger bar assembly in the process of Pilgrim in view of Baehr et al. in further view of Peterson et al. as taught by Porter et al. to provide a building product having higher quality and more accurate edges.

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 1,439,954 (Emerson), U.S. Patent No. 3,516,882 (Cummisford), U.S. Patent No. 4,816,091 (Miller), U.S. Patent No. 5,221,386 (Ensminger et al.), U.S. Patent No. 5,350,554 (Miller) and U.S. Patent No. 6,001,496 (O'Haver-Smith) have been cited of interest to show the state of the art at the time the invention was made.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael I Poe whose telephone number is (571) 272-1207. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianne can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Michael Poe/mip



**MICHAEL P. COLAIANNI**  
**SUPERVISORY PATENT EXAMINER**